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A
POPULAR TREATISE
ON THE
PREVENTION AND CURE
OF THE DIFFERENT STAGES OF
ASTHMA;

WITH NEW, SIMPLE, AND SUCCESSFUL INSTRUCTIONS FOR THE PREVENTION AND TREATMENT OF ASTHMATIC FITS.

THE FOURTH EDITION.

BY T. M. CATON, SURGEON,
LATE OF
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PREFACE.

The public attention having been directed to the consideration of Asthma, and the remedies recommended for its cure, I have been induced, from the interest thus excited on the popular mind, to select a few practical facts from the most eminent authorities relative to the nature of this distressing malady: for it must be admitted, that the series of phenomena which every disease of the organs of the chest displays opens a very extensive field for not only medical, but interesting enquiry, and in my opinion claims equal attention from philosophy as from medicine. In fact, it is somewhat difficult to comprehend, why other branches of science, and which on the scale of useful acquirement must hold a subordinate rank, are so universally studied, while a knowledge of animal hydraulic mechanism—the most beautiful, the most complicated, and certainly the most important, of them all—as yet forms no part of popular investigation. Fortunately for mankind, this study is on the eve of becoming an essential part of practical philosophy.—When I speak of practical philosophy, I mean that philosophy which may be rendered morally and physically useful to mankind.

I am thus led to think that every enquiry respecting the nature and character of any disease must be of service, by rendering familiar those subjects, in which every one, immediately or remotely, feels individually concerned. Such is my object in the present work. How far my results have been crowned with success falls not to my province even to anticipate: to the liberal criticism of an enlightened public I cheerfully submit.

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ON

ASTHMA.

There are few studies more cultivated at present, by all classes of society, than Medicine; and certainly, of the conjectural sciences, none can be of more rational advantage: for, whether we consider the effect of this kind of enquiry as enlarging the sphere of our knowledge, or as diffusing the principles of humanity and benevolence, it certainly must, on the scale of useful acquirements, always hold a prominent and fastidious character; in fact, it is a duty we owe to nature and humanity to participate and sympathise in the distresses of our fellow-creatures, and endeavour to alleviate the miseries we ourselves are born to endure. I therefore conceive apology unnecessary for the introduction of this treatise, which is merely to stimulate further enquiry respecting a disease that frequently holds the best efforts of science in derision. Uniformity of opinion rarely prevails, either with respect to the practice or opinion of medical men: Darwin says, "Happy is the patient whose physician possesses the best theory." This want of uniformity has often excited investigation respecting the application and adoption of particular remedies: I would, therefore, have it here understood, that this diversity arises from our not having yet been able to ascertain, with mathematical precision, the actual theory of the action of medicine, as well as its mode of operation: yet that does not at all affect the general principles of the healing art; for daily experience tells us, a system of rules may be laid down for the right and advantageous adoption of particular remedies, though at the same time it must be confessed no certain inference can be drawn from such rules. Yet, by informing ourselves of the nature of the disease, and by observing, from every symptom, the variation that takes place; at the same time recalling to recollection what methods, under such circumstances, have been pursued; we may regain, from observation and experience, some useful reflections, and, by a judicious alteration, render such a practice conformable to the interest of our patient.—On this principle I offer these remarks, with some general directions, collected from long experience.

It is established as a general principle of the healing art, that all classes of disease are either to be cured or their symptoms palliated; bearing in recollection, that the laws of physic can rarely be applied in their whole extent, but when we do practise, those laws must always regulate our action. To enter into a minute investigation of these points would extend this volume beyond my present intention; suffice it for me to say, that, on these principles, it becomes the imperious duty of a medical man to act with energy. The ravages of the real mortality of actual disease bear but little proportion, allowing for the declension of the animal functions, to those lost by delay and inertness. Who, amid the range of his acquaintance, has not seen a common cough, a simple cold, for want of strength necessary to repair the slight derangement produced by its continuance, become the cause of a new affliction, which frequently terminates fatally? The American Rush, no less celebrated for his genius than urbanity, remarks, that Science has much to deplore, from the multiplicity of diseases; and though the medical art possess very slender resources capable of opposing those affections generally followed by relapses, yet the facts of practical authors confirm that many diseases of the chest have been cured; for nature is ever solicitous to prolong life, even under the worst and most distressing circumstances. One case occurs to my memory, where, a patient lingering a long time, the opinion respecting his case being doubtful, at the desire of his friends he was opened: the dissection presented a novel appearance, for the right lobe of the lungs was entirely annihilated. With such practical facts before us, would any rational being leave his patient to linger a life of misery and anxiety, without any attempt to relieve? Do the privileges of science and the principles of humanity prompt us to no exertion? Shall we in the flower of youth—shall we in the riper period of manhood, and in the more sober stage of life—leave our patient a prey to disease, without attempting to relieve him? The frequency and fatality of this class of diseases is no satisfactory ground for inertness and delay. We may sincerely deplore that our limited knowledge of them should render us incapable of agreeing as to the essential character of the most important of them; yet I contend—and I contend upon no ground hostile to fact—that in all diseases of the chest we may do a great deal for the present and future ease of our patient, if we proportionate our remedies agreeably to the state of the disease.

Among this important class of diseases I have selected Asthma for the present consideration; for I am of opinion that Asthma is not a disease that *must* produce a fatal termination, patients having lived under its influence fifty years. On the contrary, I am led to believe, that, in almost every stage, its progress may be meliorated; for though its phenomena exhibit highly-varied shades of an extended diseased action, yet it has been known to exist, like many chronic diseases of the organs of respiration, without producing any general derangement of the system or organisation in particular. Indeed these diseases are so various, and so frequently complicated with each other, that they form a class of diseases we shall, not improperly, term the opprobria of medicine. What is the actual state of the lungs under the influence of Asthma has not yet been ascertained, so various are the causes that will produce it; and the effects arising from those causes are no less numerous; the subject is, therefore, extremely complex. Indeed, the divisions and distinctions medical writers have given to each stage appear to be founded on caprice, rather than on any scientific principles. Of those numerous and ambiguous varieties, I shall only enumerate the principal ones; and in treating of the history of the several species, I shall endeavour to divest them of technical terms, in order to render the descriptions familiar to every capacity.

It appears to me, that the different and varied character Asthma assumes in different individuals depends more on the nature of the constitution than on the disease itself. How very frequently does it occur, that that which has removed the disease in one, in another has called it into action!—this opposite effect is not produced by the disease, but by an undefinable peculiarity of constitution. The quantity of mercury which will salivate one constitution, will have no influence on another. In those individuals where the cerebral system manifests a high state of irritability, two causes, diametrically opposite to each other, excite the asthmatic action:—the one is, that which deranges the whole nervous system; the other, though possessed of no less power, yet acts merely local. A stimulant, where the vitality of the system is beyond the healthy standard, would bring the disease into action, while in an opposite state of the system it would allay the irritation.

After these general remarks, we will proceed to the definition of Asthma, which is rather a generic than specific term; for, according to its Greek derivation, it implies difficult respiration in general, without any allusion to the cause that gives rise to it: however, as the term is well understood, we shall consider it to imply the disease usually called by that name, and whose principal character is—difficult and impeded respiration, partaking in its nature of spasmodic affection, arising chiefly in those habits where there is a disposition to too full a state of body. And here it will be necessary to bear in recollection, that, in the progress of animal life, the body is continually becoming less vascular, and that all parts of the body are subject to the same immutable law. Thus, the coats of the arteries gradually become thicker and stronger; and with respect to the veins, these become more distended; while that which in childhood was pliant cartilage, becomes in the old man brittle bone. Therefore old age, in some subjects, is of itself the cause; for in patients advanced in life arterial ossification may be suspected: while in others it arises from narrowness of the chest. In fact, its production depends on various causes, and no condition of society is exempt from its baneful influence. Very often, also, it is the offspring of other diseases; for it is the fate of man to labour under diseases which require only an exciting cause to call into distinctive action: thus, in the young subject, if tubercles exist in the lungs, consumption is induced, &c. &c.; in the elder subject, dropsy of the chest may intervene, or palsy, or apoplexy, or aneurism, &c. &c.

Considering it only as affecting inspiration and expiration, it is a disease solely spasmodical. Observation seems to indicate that the developement of the symptoms of this disease is, for the most part, slow:—the first symptom is difficult breathing, with a great degree of fulness, sense of weight, pressure, and tension, increased by cough or violent exercise; with exacerbations on the decline of day, or during night, sometimes threatening immediate suffocation: respiration is performed with a wheezing noise; the patient is unable to lie down during the fit: the expression of the countenance exhibits peculiar marks of depression and anxiety, calling for air; the extremities unusually cold. These symptoms abate towards the dawn of day; the pulse becomes irregular, often intermitting for two, three, or more, strokes; great palpitation of the heart; the urine, secreted in small quantity, very pale, and often deposits a sediment at the end of each paroxysm. After the fit has subsided, lassitude and dejection succeed, with a great sense of weight of the head, followed by all the symptoms of indigestion.

In order to afford clear and satisfactory information on the character of Asthma in general, it will be necessary to observe, that natural respiration is that which is performed readily and easily, almost entirely by the diaphragm, and a motion of the chest, which, in fact, is scarcely perceived; while deranged or impeded respiration consists in a deviation, more or less extended, from this regular action. Hence it follows, that when it is too great or too small, when it is too long, too slow, or too quick, derangement in these organs is understood to exist; and when these symptoms are present, from no immediate injury of the parts—such as wounds of the chest, &c. &c.—and become violent, periodical, or continued, they constitute the disease we are now treating upon.

We will here explain the phenomena that take place by the action of respiration, which will lead us into an enquiry respecting the progress of circulation and digestion; but on these topics we shall only enter so far as the illustration of our subject may appear to require.

Respiration, considered apart from the compound action of all the organs connected with it, simply consists of inspiration, or the descent of air into the lungs; and expiration, or the ascent of air from the lungs. During sleep the process of this action is performed involuntarily, which constitutes what has acquired the term of spontaneous respiration; but when that respiration, agreeably to the dictates of our will, is increased or decreased, we then call it voluntary respiration: and this respiration never ceases but with life. The exciting cause of respiration is the air entering the lungs, and irritating their nerves; for the lungs are endowed, for the purpose of maintaining the animal economy, not only with nerves, but with irritability and sensibility. Thus, the irritation, called into action by the atmospheric air, is, by sympathy, communicated to the diaphragm and intercostal muscles, inducing them to contract; this contraction, in unity with the great pressure of elastic air, dilates the whole chest. The air being deprived of its stimulus, the intercostal muscles and the diaphragm become relaxed; the cartilages of the ribs and the abdominal muscles, before expanded, return to their original state; and thus the air is expelled from the lungs. About eighteen inspirations take place in a minute. The minute ramifications of the pulmonary artery, which supply the lungs with blood, form a network of vessels on the internal membrane of the air-vesicles: during the period of expiration the air-vessels collapse; in conformity to that action, the blood-vessels become tortuous, and the blood is prevented passing: but in inspiration, the air-vesicles being dilated, the tortuous vessels become elongated, and a free passage is afforded the blood. The very delicate coats of these vessels are rendered so thin, as to suffer a chemical action to take place between the air-vesicles and the blood in the vessels.

The primary use of respiration is the absorption of oxygen gas from the atmospheric air; for animal heat depends on the absorption of oxygen by the lungs, and is generally from about 94 to 100 degrees of Fahrenheit. The experiments of several very ingenious and learned chemists seem to favour an opinion that, as the absorption of vital air by the circulation of the blood is the primary and principal phenomenon of respiration, they have been led to infer that death follows when that absorption no longer takes place.

Atmospheric air is of such a nature that it pervades the pores of all bodies, and very readily enters into the composition of every vegetable and animal substance. This great absorption of air naturally leads us to enquire, on what principle the same proportion of vital air is always maintained in the atmosphere? This is sufficiently answered for our purpose, in the consideration of what an immense consumption the respiration of animals, and the daily combination of a great portion of inflammable matter, must consume: the balance, for the action must be always equal to the re-action, is in all probability, and as far as analogy can correspond, supported by the putrefactive process of animal and vegetable matter, the decomposition of water, and other substances containing vital air, conjoined with the respiration of the vegetable kingdom. From these facts we deduce, that this subtile and elastic fluid is the primary and physical agent both of animal and vegetable life.

We will now consider it as connected with ourselves in particular.—This fluid undergoes decomposition through the animal body: in the lungs, the same air cannot be rebreathed, because, by its absorption with the blood, it loses its vital agency; the azotic part uniting with a carbonic principle from the venous blood, returns to the respiratory organ unfit for a second inspiration; in which process the blood being disengaged from the constituent principle of the carbonic gas, in the secretion of that gas, as it frees itself from the constituent principle of bile, in the secretion of that fluid.

I shall take this opportunity to observe, that the blood, the circulation of which has occupied the ingenuity of so many, is propelled from its great chemical laboratory the heart, to the extremities, through the arteries, where it takes up the chyle formed from the operation of the digestive process in the stomach; and with this accumulated resource it makes a new digression to the lungs, where the blood, by the absorption of vital air, acquires new principles. It comes from the heart to the lungs of a dark red colour, inclining to black; but by its union with the vital air it assumes a scarlet or florid hue: after this, it traverses through the minute ramifications of the whole body, and returns to the lungs with the loss of its floridity. The blood in this passage is not carried for the sake of nutrition, but to receive the portion of vital air necessary to the continuance of animal life; and it is probable, during its passage through the lungs and liver, that it deposits certain materials for the formation of the venous blood, which is assisted by the action of the gastric system.

It is not to be inferred from the last observation, that I conceive the gastric action solely necessary to the process of digestion; for that power belongs to all the organs, by whose united action the absorbing vessels take up the most nutritious parts of the food destined for animal support. The lacteal vessels convey chyle, by particular vessels, through the chest, into the left subclavian vein, and so directly to the heart: the residuum of which animal substance is thrown off by the fæcal functions, while the excess of its heat is evaporated by perspiration; its aqueous and saline parts being carried off by the kidneys. For, by the distribution of the arteries into such various and multiplied ramifications, a state of rarefaction is produced in the arterial blood, necessary for the production of those changes which are continually taking place in every organised part. But it is only in the lungs that the blood reassumes its arterial quality; for on its return by the veins and lymphatics it undergoes very different and distinct assimilations. The lymph and the chyle also, in their passage through the lymphatic glands, acquire a character necessary to their animalisation. Nor is the liver unoccupied amid these incessant operations; for it liberates, during the partial flow of the venous blood through its vessels, the oily and albuminous substance that accompanies it: for all bodies introduced into the blood, and that do not partake of the principle of animalisation, pass off by some of the secretions; thus no part of our hydraulic, mechanic machine, remains unemployed. But how this fluid is still farther elaborated, what other changes it suffers before it becomes part of the constitution, remain still to be considered.

We shall close these remarks with a few observations on the effect of atmospheric air on the animal system. The sudden changes of air that take place in our climate, no doubt, have a great influence in the production of disease (for the constitution appears to assimilate with these changes), as well as on diseases when produced. For the establishment of these facts I believe I have not to travel far; for he who has attended to what is termed the peculiarities of his own constitution, must frequently have remarked, on a change of air, he suddenly became affected with head-ache, lassitude, and a thousand indescribable sensations: these symptoms are more particularly felt at the full and the new moon, and about the period of the vernal and after the autumnal equinoxes. Nor are we at a loss to account why at these seasons such an effect should be more readily produced; for they usually abound with storms and tempests: the air thus agitated, is rendered too light, and has not sufficient power to stimulate the lungs to a healthy action; the blood, of course, flows not freely; hence difficulty of breathing, palpitation of the heart, &c. attended with their usual concomitants, oppression and want of sleep, producing a train of diseases dependent in a great measure on atmospheric action. Nor is this effect, which too frequently has been the case, to be referred to imaginary sensibility; for, whatever the cause may be that produces this morbid action, the distress of the patient, I contend, is real, and a change of organisation actually takes place, equally hostile to the mind and to the constitution.

It is also worthy of observation, and to be borne in recollection, that there is a great quantity of air contained in animal blood, which is expanded by heat, and condensed by its abstraction; and this air always maintains an equal balance with that pressing on the surface of our bodies. This is illustrated by the sensation people of a weak, delicate habit, and nervous sensibility, feel, when a thunder-storm passes over or near them, the celebral system of such persons being too excitable. On this principle some of the sudden changes may be accounted for in our constitutions, which are strong and vigorous with a large body of air upon them, and relaxed and languid when it is light, and refuses to give our fibres their proper tone.

The investigation of the learned Beddoes unfolded the cause of many diseases, and suggested a more accurate mode of treatment, founded upon the knowledge of the office of the lungs, and the agency of the atmospheric air. Thus, by degrees, the mystery of animal and vegetable life will be laid open: feeling ourselves interested in these enquiries, will stimulate us to further exertion. The ingenuity and the perseverence of a Harvey elucidated the circulation of the blood; to Van Helmont we owe our knowledge of the bile; but to the happy lot of modern chemists has it fallen to define that on a regular absorption of air depends every moment of our existence—for this air is universally diffused wherever life is intended to subsist. Thus, the influence of the air on the blood, and on the animal economy in general, comprises a system both useful and interesting to every class of readers, and in which the wisdom of a Supreme Director pre-eminently shines.

From the consideration of a subject so full of sublimity, and one on which we have yet a great deal to learn, we are led to enquire into the causes that more immediately give rise to Asthma. On this disputable point very opposite hypotheses have been advanced, by men equally eminent, replete with many useful observations; and modes of practice have been pointed out no less various than repugnant to each other. If we compare the results formed by numerous practical observations, respecting the history of diseases that attend us in our state of civilised capacity, the investigation strongly favours the idea, that disease arises from our living together in crowded cities, &c. and is therefore definable to the result of a local action; for in proportion to the multitude of the citizens, so is the effect produced: thus different diseases, with their train of modifications, arise, to which we afterwards remain subject, but which in a state of nature would not have been unfolded; for man, independent of such local excitements, is certainly not the subject of a greater portion of disease than any other animal. Under a diseased state, two modes of action, diametrically opposite to each other, exist in the animal economy; —one that propels the system to a discharge of its healthy functions, and one that brings death. Death itself is the offspring of the action and re-action of the cerebral and nervous influence, which urges each organ to the accurate performance of the functions assigned to it; and this nervous energy is itself the result of the functions which cause it to be maintained: and the law of sympathy (which affects the whole system) supports this action, and the functions of the various parts. It follows, disease merely consists in a combination, more or less extended, of a different mode of derangement in the action of the system of the organs, or is the baneful result that flows from this impeded action. In fact, in all and every part of organisation a perpetual secretion and absorption are taking place, for which the nerves are destined to convey the principle of action, and the arteries deposit the materials of nutrition. All and every system of the organs discharge their separate and distinct functions, by the influence of the nerves that are ramified upon them. Thus it is manifest, on all the viscera of the chest acts Asthma; for this affection is, for the most part, combined, either as a cause or an effect, with a general derangement of these important organs—for on the organs of respiration this disease makes its first impression. Dr. Cullen, a name revered in science, considered Asthma to depend on a peculiar state of the lungs; and its proximate cause he regarded as a spasmodic constriction of the muscular fibres of the trachea and its appendages, preventing the necessary expansion for a full and free inspiration. The scientific Darwin entertained the idea, that humoral Asthma was produced by a partial torpidity of the vessels of the lungs, and, to a certain degree, an inactivity of the lymphatics, whose lymph being diffused in the air-cells, is not taken up by the absorbents. He also conceived an affection of the liver, or biliary ducts, and even a pain in a remote part of the system, might occasionally give rise to it.

Among the various causes assigned as producing this disease, the following claim consideration.—A compression of the veins of the bronchial system, or the vessels of the lungs, or of the nerves, may give rise to it; first, by reason of dropsy of the chest, by abscess or tubercle in the lungs, by adhesion in the lungs, by dropsy of any of the large viscera, by fits of apoplexy, and the too slow action of the blood from the heart to the arteries; in short, any affection of the large viscera may produce it, by the compression such affections produce, immediately or remotely, on the pulmonary vessels. The chronic kind arises from the abuse of the gastric organ, and inactivity of the muscular system in general; the repulsion, too, of eruptions, and cutaneous inflammation; the premature healing of old ulcerations; the receding of gout; a certain irritable state of the organs of respiration, especially any derangement of that important muscle the diaphragm; mental irritation; innutritious or stimulating food; want of exercise; malformation of the parts; &c. &c. The more remote and ambiguous causes appear to be—-a plethoric state of the whole system, a superabundance of mucal secretion, the rigidity of the fibres in the more advanced stages of life, a relaxation of the bronchial vessels, an impure atmosphere, suppression of the hemorrhoidal and menstrual flux, acidity pervading the organs of digestion, &c. &c. I have, lastly, to enumerate several pernicious employments, which either accelerate the tendency to disease, or aggravate its violence when produced; for they give a peculiar modification to the appearance of the malady, as well as produce peculiar affections, independent of any other cause; for the organs of individuals drawn from the influence of atmospheric variation acquire a great susceptibility for being affected by every abrupt change: thus each organ is more readily disordered, and the derangement produced continues long after the cause it arose from has ceased, and its action is according to the temperature of the skin. It is, therefore, highly prejudicial, during any period of the year, to exclude ourselves from the action of atmospheric air: to be always at the same temperature, and to go out when heated, is to solicit disease by the first impression the lungs receive from the surrounding atmosphere; for the functions of this organ, and the changes it induces on the animal system, ought always to be kept in view. Hoffman relates several cases of Asthma from repelled eruptions, the drying-up of ulcers, the imprudent checking of fetid perspirations of the feet: Musgrave records a species arising from repelled gout: Ramanzini tells us that stone-cutters, plasterers, &c. become affected from the particles of dust passing into the lungs; and, in corroboration of these facts, Morgagni and Bonetus have each selected several instances where calculi were expectorated. Millers, stone-cutters, tobacconists, sieve-makers, grain-measurers, wool, flax, and cotton carders, &c. &c. are, from the nature of their employment, all subject to this class of diseases. The lesser remote causes of Asthma are, all those things that compress, agitate, and weaken those organs; which, whether they act immediately upon them or by consent, may be considered in the light of remote causes.

From what we have already premised, it must be confessed that difficult respiration is a disease which requires the most minute investigation—in which all the preceding and concomitant circumstances must with care be examined, for we have not always the power to trace the cause to its source: therefore, the primary object is, carefully to ascertain the actual state of the organs of respiration; for by enquiring whether the difficulty of breathing is constantly present, or only at intervals—whether it be a primary affection, or the symptom of another disease—whether the digestive functions exhibit symptoms of a partial or extended diseased action, and what is the state of the nervous system—we shall be able to draw such conclusions as will very materially assist us in our mode of treatment. For instance, if the nervous system is affected, paralysis, convulsion, or spasm, may be suspected: the great vessels appertaining to the larynx, lungs, heart, &c. &c. may be affected by sympathy. Having ascertained the character of the disease, the next object requiring our investigation is the cough, for it is often a distinctive symptom of the disease.—These questions, and those that arise out of them, minutely examined, will bring together a number of particulars illustrative of the actual state of the disease, and of course greatly assist in the elucidation of it.

The principal peculiarities of this disease claim also our consideration: since, from inflammation of the lungs and pleurisy we may distinguish it by its long-standing, unattended with acute pain or stitches in the chest, and by the absence of fever; from other classes of disease affecting these organs, it is characterised by the return of the fits at intervals, coming on generally towards night, with a wheezing noise, together with a sense of constriction about the chest, compelling the patient to seek for ease in an erect position, with frequent and anxious respiration, as well as the peculiar relief cold air produces.

Respecting the termination of Asthma, I have said I entertain an opinion that, in almost all its stages, its progress may be relieved. Perhaps the expression may be too general; for it is necessary to bear in recollection, that in all cases of impeded respiration danger exists. It would justly expose the important principles of the healing art to contempt and derision, did I boldly and unwisely urge, that any specific remedy would, or could, remove an ambiguous disease, the cause of which we can but remotely trace, under any character the disease may assume. Happy, thrice happy, is it, for our best interest, that it is the sublimer office of systematic science only to encourage us to apply such means as judgment and experience have usually found best adapted to the state of the diseased action; and he who promises more sports with the feelings of his patient and the privileges of science, for the effect of medicine has less dependance on its general property than on its being adapted to the constitution and other concurring circumstances.

Asthma is generally very obstinate, and frequently recurs, owing in a great measure to the complicated and delicate mechanism of the important organs concerned in respiration: and though on its first appearance the symptoms may be slight, yet it is not unusually the signal of the approach of some other chronic affection, either by immediate connection or sympathy. I shall here briefly endeavour to explain the nature of sympathy, because a very extensive train of diseases depend upon that sympathetic connection which subsists between different parts of the body: in fact, sympathy is a law of very great influence in the animal economy, both in extending the power and the seat of the disease, as well as forming a principle of cure. Respiration, circulation, digestion, all obey the laws of sympathy, as regular and immutable;

for the living body, like the great globe itself, is subject to certain fundamental principles, from which it never deviates. It is obvious we know little respecting the absolute act of sympathy; the little we are acquainted with informs us, that throughout the whole animal frame a certain interest, or self-created connection and mutual dependance, is maintained by the laws of action and reaction, which in a state of health maintains an equal balance. Is it not by sympathy that in this disease the shoulders and the abdomen are affected? The peculiar character of sympathetic disease is, that it is not so permanent, but produced more quickly. Again, when disease pervades the stomach, does not languor and debility follow? De Haen justly observes, that the laws of the wonderful connection subsisting between the mind and body are unknown; we are totally ignorant of those parts by means of which this commerce is kept up—we know not by what law they touch, and move themselves, and again stop. Yet the efficient and physical cause has no reference to the general principles; all we want to acquire from the action of connection and sympathy is, to enable us to distinguish the actual character of the disease—whether it originates from respiration being impeded—from any organic affection of the larynx, lungs, heart, or any of the great vessels appertaining to those organs—from respiration being primarily affected—or as succeeding to another disease, for Asthma may continue to exist long after the cause that gave birth to it has entirely ceased; for the organs of respiration, from disease, acquire a peculiar degree of sensibility, which disposes them to the same affection again, by a series of phenomena more or less permanent or transitory, and which, like all chronic affections, have alternate periods of abatement and exacerbation.

Agreeably to the division of practical writers, we shall divide Asthma into the periodical and continued, though in fact they are merely the result of the same causes, acting with more or less energy, according to the extent or continuance of the existing derangement. In order to afford a clear and comprehensive illustration of our subject, we will recapitulate the symptoms which are usually present during the paroxysm of the periodical affection. In the character of the periodical Asthma, we generally find the patient complains of flatulency and distension of the stomach, with a sense of stricture, heat, and fever; drowsiness, head-ache, and nausea; the lungs feel rigid; the breathing very greatly disturbed, nearly abdominal, which will account for the pain usually felt in that region; excessive fatigue; general lassitude and torpor; the urine pale; the extremities cold. During the early part of the night all the symptoms are increased, with bilious vomiting, and an involuntary flow of tears; the pulse small and weak; palpitation of the heart; the countenance livid, with a sense of suffocation towards morning: these harassing symptoms gradually abate, the breathing becomes free, some degree of expectoration takes place, the urine deposits a sediment, and the paroxysm ceases.

In the continued Asthma the fits are not so regular; the symptoms correspond more with the catarrhal character, nor do they return by such severe paroxysms: the breathing is relieved by expectoration (which is dependent on the mucous membrane lining the trachea, the plethoric state of the system, and the age of the individual); the patient also becomes sensible to the least variation in the state of the atmosphere, accompanied with great oppression, and a sense of plenitude about the stomach. I shall now describe the peculiar paroxysm belonging to this species.—During the whole day which precedes the fit, the patient experiences very great agitation, head-ache, heaviness in the limbs, and a degree of oppression, more or less extended, at the breast. At the interval of a few hours from dinner, great oppression follows, with a frequent eructation of an insipid matter: as the evening approaches, a sensation of hoarseness is felt, as well as constriction of all the bronchial vessels, producing a sort of convulsive cough; an intolerable heat succeeds, which is the certain harbinger of the fit: respiration then becomes exceedingly difficult and slow, confined apparently to abdominal action, rendering it necessary for the patient to rise out of bed. He now makes violent efforts to perform respiration, accompanied with a sort of hissing or hoarse sound; he is incapable of speaking, coughing, or expectorating, with any degree of freedom; in short, a more painful and distressing scene cannot fall to the lot of an individual to delineate. The last stage advances:—the pulse quick, close, and very unequal; the feet and hands remarkably cold; the face surrounded with a blackish hue; the eyes sparkle; the tears unbidden flow: the paroxysm having reached its dreadful acmé, all these symptoms gradually abate, with an expectoration of crude or gelatinous matter, resembling in appearance the white of an egg, but marked with black filaments: but if the fit be of longer duration than one night, little is expectorated till the third or fourth day, and which is often streaked with blood; the expectoration then ceases till the return of another fit.

The symptoms which may be common to every species of Asthma are—difficulty of breathing, cough, pain in the chest, slight fever, palpitation of the heart, an aggravation of these symptoms on motion, impediment of speech, coldness of the extremities, dread of suffocation, agitation of the scapula, shoulders, clavicle, and abdomen, &c. &c.

From the general character of this disease, we can draw no certain conclusions respecting either the continuation or succession of these fits; the result of our experience only enables us to state, that some individuals have more frequent accessions of these fits in summer, particularly during the dog-days, than in winter; while, on the other hand, winter seems in some constitutions to favour such a disposition.

In all diseases of the organs of respiration we labour under many very evident disadvantages. Over the stomach and bowels medicine possesses a certain portion of controul, by which it is often in our power to remove from them morbific causes, but over the lungs we can only exert an indirect action; and frequently before any application is made these diseases have advanced beyond the confines of redemption. The first and most essential symptom that strikes our attention in this disease is the difficulty of breathing. As we have not always the power of tracing, with mathematical accuracy, the cause of this symptom, I lay it down as an invariable rule, where the least doubt exists, to bleed, regulating the quantity agreeably to existing circumstances, for we cannot say what is the actual state of the parts affected; and if the difficulty of breathing should arise from any inflammatory action, would not such a practice be the salvation of our patient? Our first object is, to diminish increased arterial action, if it arise from a super-irritative state of the system, in order to give free energy to the lungs, as well as those organs immediately dependent upon them. By what other mode shall we so soon arrive at our object? Narcotics and blisters not only act at a more distant period, but with less certainty; while the influence of bleeding is instantaneously felt. Nor ought we to be deterred from this potent operation on slender ground; neither the coldness of the extremities, nor a small and contracted pulse, ought to discourage us. If we mean to give the patient a chance, we must act with energy; hence bleeding alone will not suffice; for we must assist the operation by the application of blisters, and these must precede the use of any internal remedy.

I have stated that our object is to diminish arterial influence, in order to give free action to the lungs; but when circumstances forbid the use of the lancet, our object is then to excite irritation in a distant part, and, by this acquired irritation, thus changed the mode of the action which constitutes the disease.

From the above observations we draw the following conclusions:—in super-irritative habits which border on a plethoric state, or where the difficulty of breathing arises from any peculiar irritation of the organs of respiration, bleeding is indispensably necessary: in fact, two circumstances alone should detain us from this operation;—the one is, where the patient is previously exhausted by disease; the other is, where the sub-irritative affection preponderates. In the latter case, the individual has arrived at that state of disease when the vital fluid can be little sported with; and in these sub-irritative habits it assumes a mixed character, for diseases of the internal organs are rarely confined to that part in which they first begin. When bleeding cannot well be borne, cupping-glasses applied to the chest or shoulders must be resorted to; and when these are removed, a blister should immediately be put on: fomentations to the chest, of poppy-head and chamomile flowers; tepid bathing of the feet—as this regulates the general circulations, and promotes perspiration; clysters of the exciting kind, &c.: while with internal remedies we endeavour to excite a tendency to perspiration. These general remedies separate or combined, are applicable during the continuance of the paroxysm: for our object is evidently, during the continuance of the fit, to endeavour to excite a repeated and continued irritation in the chest, so that we may diminish that existing in the internal viscera. During the continuance of the fit, the temperature of the bed-room ought to incline to cold, as heat fatigues the sufferer.

In regard to smoking, we have to take into consideration that a great portion of the smoke is blown out of the mouth, yet though this is the fact, nevertheless a part of the smoke will necessarily pass into the lungs, and its narcotic power often relieves spasmodic asthma; for by drawing off the expectoration, it efficaciously cleanses the lungs; therefore I am decidedly of opinion it proves highly beneficial in all cases, where spasm forms a leading symptom.

On account of the difficulty attending receiving steams and vapours into the lungs, this part of medicine has been little attended too, yet I think it has very great advantage when properly applied.

Individuals once the subject of asthma, may expect again to be visited by it; those, therefore, that labour under any malady of the chest, cannot be too attentive to their general habits. The stomach and bowels require considerable attention: indeed, an accession of its fits may be diminished by management. Respecting the diet of asthmatic persons, I shall observe, that light animal food and water are much better suited to such people than flatulent aliment, fermented or spiritous liquors, and especially new-baked bread. Veal, lamb, rabbits, fresh-water fish, fowls, thin broth, fruits, with but little vegetables—perry, cyder, mountain wine (diluted with water)—may be taken: but in the choice of these articles, as well as in medicine, the individual must proportionate them agreeably to the different circumstances of the constitution. The errors of diet are numerous, and our failure in the cure of disease often depends on the noncompliance of our patient in this respect; for when the stomach and the bowels are unable to prepare and assimilate food or medicine, we can expect little or no advantage to be derived from them when mixed in the general circulation: therefore, patients ought to avoid every thing that is capable of producing flatulency or indigestion, in which their own feelings will be the better guide.

In the choice of residence, a numerous range of facts prove those regions best adapted to health that lie within the temperate zones. In the environs of London, Hampstead, Highgate, Islington, Brompton, Blackheath, and the luxuriant villages in their vicinity, will be found conducive to the health of asthmatic people:

they are, indeed, differently affected by the atmosphere in general—some breathe with energy in the city, others in that of the country: but they all invariably prefer the dry open atmosphere of low districts to that of the mountains. Da Costa's companions, in ascending the mountains of Quito, were seized with vertigo, vomiting, &c. Nevertheless, damp foggy air, and humid situations, are always to be avoided. In fact, the air best adapted to these individuals ought to contain a greater portion of oxygen than we usually inspire.

In a clime so variable as our own, much is to be gained by training ourselves gradually to bear the vicissitudes of so changeable an atmosphere; and a great deal depends upon commencing this mode of action at an early period, by which even weakly constitutions may be very much improved; for man is an animal reared with considerable difficulty. But even this vigor may be carried too far; the natural strength of the body and mind must not be pressed beyond a given point: yet, when the health is good, by degrees, almost any change may be borne. But while disease, or its effects, remain upon us, the most trifling innovation is felt, and that not without hazard. A more striking instance of the influence of habit cannot be given, than that which is seen among our labourers in agriculture, and those engaged in the active pursuits of the field; habit begins from infancy to steel their nerves, and they are thus rendered able to resist, almost always, the different effects of heat and cold.

Clothing next claims our attention, for nothing can be more conducive to health than an attention to this point. In winter we want an increased temperature, in summer a decreased one; therefore, asthmatic patients should accommodate their clothing agreeably to the season of the year. But I think, in this clime, such patients ought not to decline the use of flannel at any period of the year: in summer, by the absorption of perspirable matter, cold is prevented; in winter, that perspiration is continued at a temperature necessary to the salutary efforts of health. In the various classes of society there is not a more healthy portion than coachmen and chairmen, who are uncommonly attentive to their mode of dress. The feet ought always to be kept warm and dry: the Honourable R. Boyle was very attentive to this; while the benevolent Howard followed the system of the immortal Locke, with equal success. Cold easterly winds, damp air, and wet feet, no doubt contribute largely in the establishment of this disease.

In conformity to my original design, I have only given the character of general species of Asthma, and of course shall confine myself to their mode of cure: for the subdivision of these species do not essentially vary from their parent; therefore we cannot fall into gross and fundamental error, if we conduct our mode of cure agreeably to this distinction.

In many cases of periodical Asthma, I have pursued the following practice with success, in addition to the remedies before given.—

Take of the compound spirit of æther,
one drachm;
Wine of ipecacuan, five drops;
Camphorated mixture, one ounce.
Mix.

This may be exhibited during the fit, and repeated every four hours, with the following bolus:

Take of gum camphor, six grains;
Spirits of wine, three drops:
Powder of recently dried fox-glove,
half a grain:
Sub-muriate of mercury, one grain;
Conserve of hips—sufficient to make
it up.

After the fit has subsided, the following remedies will facilitate the return to health :

Take of gum asafœtida, half a drachm ;
Gum opium, three grains ;
Sub-muriate of mercury, eight grains :
Powder of ipecacuan, ten grains :
Syrup—sufficient to form into a mass,

Divide into thirty pills ; two to be taken three times a-day, with two tablespoonsfull of the following mixture :

Take of gum ammoniac, two drachms ;
Tartarized antimony, two grains ;
Compound tincture of camphor, half an ounce ;
Pennyroyal-water, eight ounces.

The gum ammoniac must be well triturated, so as to prevent the necessity for straining the mixture.

For the cough:

Or,

℞ Compound spirit of æther, two drachms;
Tincture of asafœtida, half an ounce;
Prepared ammonia, one drachm;
Solution of the acetate of ammonia, two ounces;
Compound tincture of bark, half an ounce;
Pennyroyal-water, four ounces.
Well mixed.

One tablespoonfull three times a-day.

For the breath:

Or,

℞ Tincture of hops, half an ounce;
Spirit of æther, and compound tincture of bark, of each two drachms;
Camphorated mixture, six ounces.
Well mixed.

Three tablespoonsfull to be taken when the breathing is difficult, and repeated every three hours, if necessary.

With these, at intervals, I would have given plentiful draughts of almond emulsion, vinegar whey, lemonade, currant jelly, &c. for these are not only cooling and nutritive, but will assist to allay the irritation in the lungs, as well as lessen the spasmodic action. White poppy seeds, about two ounces, well beaten, to which gradually add one quart of water, forms an excellent emulsion, taken the same as the above. Dr. Baynard recommends apples and milk: and where fever runs high, the following saline mixture will be proper:

TAKE of fresh lemon-juice, three ounces;
Tartarised antimony, one grain:
Sub-carbonate of potash, two drachms;
Peppermint-water, eight ounces;
Compound tincture of camphor, half an ounce.

Three tablespoonsfull occasionally may be given.

In the continued Asthma, during the fit, these remedies will be proper, as well as the general treatment: but in this stage we have to attempt more than immediate relief, for we have to endeavour to prevent a recurrence of the paroxysms. Various are the modes adopted for this purpose. Perceval, Monro, Cullen, &c. &c. all differ in their ideas upon this important point. From this long list I have selected the following forms, because from them I have seen the most happy effects.

Blisters are proper in every stage of Asthma, particularly where the lungs are loaded with pituitous matter, or their irritation is great, and where a relaxation of the bronchial vessels exists: and in the spasmodic kind, we have the joint testimony of Hoffman and Whyth for their application. In the latter species, the inside of the calf of the leg is the best place for applying it: while on the chest I would apply a portion of the following ointment:

Take of tartarised antimony, one drachm;
Spermaceti ointment, one ounce.
Well mix.

To the adoption of these active remedies, I should deem any of the following prescriptions worthy of trial.—

Take of the super-acetate of lead, ten grains;
Gum camphor, thirty grains;
Sub-muriate of mercury, twelve grains;
Soft extract of gentian—a sufficient quantity to form it into twenty-four pills: two to be taken twice a-day

Or,

Take of gum ammoniac, and Spanish soap, of each one drachm;
Gum opium, twelve grains;
Peruvian balsam, twenty drops;
Syrup—sufficient to form into a mass, to be divided into twenty-four pills: taken as the last.

Or,

Take of gum ammoniac, and gum myrrh, of each one drachm ;

Tartarised antimony, and Gum opium, of each ten grains ;

Simple syrup—sufficient quantity to form forty-eight pills : three to be taken at bed-time, and two in the morning.

Take of compound tincture of camphor, six drachms ;

Conserve of hips, one ounce ;

Compound powder of tragacanth, three drachms ;

Powder of ipecacuan, thirty grains ;

Simple syrup—sufficient to form into a linctus : a teaspoonfull to be taken frequently.

Or,

Powder of ipecacuan root, one scruple;
Ginger (the Jamaica), and Spanish soap, of each one drachm;
Gum asafœtida, one scruple;
Syrup—sufficient to form into a mass of forty pills: three to be taken three times a-day.

TAKE of opium six drachms.
Honey, four ounces;
Benzoic acid, one drachm;
Gum camphor, two scruples;
Oil of aniseseed, half a drachm;
Spirit of wine, proof, two pounds.
Well mix.

Let this stand eighteen days, then filter it through bibulous paper. Two tablespoonsfull to be taken three times a-day.

Or,

℞ Vitriolated zinc, one scruple;
Essential salt of bark, and pill aloes (with myrrh), of each one drachm;
Syrup—sufficient to divide into forty-eight pills: two to be taken twice or three times a-day.

Or,

℞ Gum asafœtida, one drachm;
Purified opium, six grains;
Sub-muriate of mercury, eight grains;
Tartarised antimony, four grains;
Syrup—sufficient quantity to form into a mass of thirty-six pills: two to be taken twice a-day.

THE END.

ERRATUM.

Page 23. line 4 from the bottom for death read health.

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